

REMARKS / DISCUSSION OF ISSUES

Claims 1 and 4-9 are pending in the application. Claims 1, 7 and 8 are the independent claims.

Objection to the Specification

Applicants once again thank the Examiner for providing information about recommended section headings. However, Applicants respectfully decline to add the headings. Section headings are not statutorily required for filing a non-provisional patent application under 35 USC § 111(a), but per 37 CFR § 1.51(d) are only guidelines that are suggested for applicant's use. (See “Miscellaneous Changes in Patent Practice, Response to comments 17 and 18” (Official Gazette, August 13, 1996) [Docket No: 950620162-6014-02] RIN 0651-AA75 (“Section 1.77 is permissive rather than mandatory. ... [T]he Office will not require any application to comply with the format set forth in 1.77”)). (See also MPEP § 608.01(a)).

Applicants further respectfully submit that this and previous replies to the Examiner’s objections are not an interpretation of a cited MPEP section, but rather are based on their reliance upon the Official Gazette’s notice of changes to patent practice indicating that headings are permitted by are not mandatory. The Examiner has cited no basis in law requiring the headings, but rather cites a section of the MPEP, which does not have the force of law. Thus, Applicants again decline to add the headings.

Rejections under 35 U.S.C. § 101

Applicants have amended claim 8 to reflect suggested language, and thank the Examiner for clarification and suggestion of the language. Applicants respectfully submit that in view of the amendment to claim 8, the rejections of claims 8 and 9 under this section of the Code are moot.

Rejections under 35 U.S.C. § 102

Claims 1 and 4-9 are rejected under 35 U.S.C. § 102(b) as being anticipated by *Pieper, et al.* (US Patent 5,825,908). For at least the following reasons, Applicants respectfully submit that the rejection is improper and should be withdrawn.

At the outset Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, a proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *See, e.g., In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

i. Claims 1,7 and 8

Claim 1 is drawn to a method of processing images, and features, *inter alia*,
“...segmenting a region of interest from the one or more relevant images is performed in one or more of the individual images, wherein the segmenting is performed on the basis of information in the reconstructed slice along the cut plane through the multi-dimensional data set,
locating an edge in the reconstructed slice, wherein the segmenting in the region of interest in the one or more images is performed on the basis of the location of the edge found in the relevant...”

In a representative embodiment, shown in Fig. 2 of the filed application, a simplified representation of the slice along the cut plane 3 is shown. FIG. 2 notably shows the slices in the cut plane of the region of interest as shown in the three individual images of FIG. 1. FIG. 2 also shows that the region of interest in the reconstructed slice is clearly separated from image information outside said region of interest. **Notably distinct edges 22, 23 can be seen in the reconstructed slice. The edge of the region of interest in each of the individual images 1 is determined on the basis of the distinct edges 22, 23 in the reconstructed slice.**

The Office Action directs Applicants to column 17, lines 15-35 of the applied art. This portion of the applied art discloses:

In accordance with the present invention, the appropriately programmed computer 50 then applies a segmentation algorithm of the sort well known in the art to segment out related structure within the patient-specific 3-D database. Preferably computer 50 is programmed to apply a 3-D connected component search through the volumetric data set contained in second section 40 of data storage device or medium 30 so as to determine the set of volumetric samples that are (i) within the range specified for blood, and which (ii) can be connected along a connected path back to one of the seeds, where each of the locations along the path is also within the range specified for blood. The result of this 3-D connected component search is a set of 3-D locations in the volumetric data set which correspond to blood flowing through the blood vessel. For the purposes of the present illustration, this set of 3-D locations can be characterized as the "blood region". The segmented anatomical structure (i.e., the blood in the blood region) can then be highlighted or otherwise identified on each of the 2-D slice images. See, for example, FIGS. 17A and 18A, where the segmented blood region in vascular tissue 205 has been cross-hatched to represent such highlighting.

Thus, the portion of the applied art relied upon in the Office Action relates to a highlighting function and not the locating of an edge and segmenting based on the location of the edge. Accordingly, the applied art fails to disclose at least one feature of claim 1. Therefore, a *prima facie* case of anticipation cannot be made based on this reference and claim 1 is patentable over the applied art. Moreover, claims 4-6, which depend from claim 1, are patentable as a matter of law.

Claims 7 and 8 each includes similar features to those of claim 1 described above. Therefore, these claims are patentable for at least the same reasons. Claim 9, which depends from claim 8, is patentable as a matter of law.

ii. Inherency not established

The Examiner asserts:

“It should be noted that edges are inherently identified when the anatomical structure or object of interest is identified in the corresponding 2D slices. There can be no object of interest or anatomical structure without the known location of identified edges which define such a structure.”

At the outset, Applicants note that claim 1 recites: *locating an edge in the reconstructed slice, wherein the segmenting in the region of interest in the one or more images is performed on the basis of the location of the edge found in the relevant...*” So, even assuming arguendo that the reference did inherently disclose edges as asserted by the Examiner, the Office Action has failed to establish that segmentation of images is performed on the basis thereof. Stated somewhat differently, even if the edges were disclosed as the Examiner alleges, the rejection fails to establish their use as claimed.

Moreover, the Examiner has not established inherency via established standards. Rather, a mere statement unsupported by required extrinsic evidence is provided.

Applicants direct the Examiner to M.P.E.P. § 2112 IV, which provides that:

EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ

323, 326 (CCPA 1981). “To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’ ” In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

(emphasis added).

Furthermore, a claim rejection must be based on objective evidence of record, and cannot be supported merely on subjective belief and unknown authority. See, e.g., M.P.E.P. § 2144.03; *In re Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); *In re Zerko*, 258 F.3d at 1386, 59 USPQ2d at 1697.

No such concrete evidence has been provided by the Examiner here, nor did the Examiner submit an affidavit as required by 37 C.F.R. § 1.104(d)(2) if this proposed motive were based on facts within his personal knowledge (see M.P.E.P. § 2144.03). Applicants respectfully request that such an affidavit be provided if a rejection continues to be made without a citation of any objective evidence. Based on the lack of extrinsic evidence or affidavit, the rejection based on inherency is without merit and is, therefore, improper.

iii. Rejections are improper

The rejections of claims 1, 7 and 8 are wholly improper for at least the reasons set forth above. Moreover, claim 4-6 and 9, which depend from claims 1 and 8 are also patentable for at least the same reasons.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies to charge payment or credit any overpayment to Deposit Account Number 50-0238 for any additional fees, including, but not limited to, the fees under 37 C.F.R. §1.16 or under 37 C.F.R. §1.17.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:

Phillips Electronics North America Corp.

s/William S. Francos/

by: William S. Francos (Reg. No. 38,456)

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